BlackRock Health Sciences Trust Form N-Q March 29, 2010

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-21702

Name of Fund: BlackRock Health Sciences Trust (BME)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: Anne F. Ackerley, Chief Executive Officer, BlackRock Health Sciences Trust, 55 East 52nd Street, New

York, NY 10055.

Registrant s telephone number, including area code: (800) 882-0052, Option 4

Date of fiscal year end: 10/31/2010

Date of reporting period: 01/31/2010

Schedule of Investments January 31, 2010 (Unaudited)

BlackRock Health Sciences Trust (BME) (Percentages shown are based on Net Assets)

Shares	Common Stocks	Value
	Biotechnology 10.9%	
31,900	3SBio, Inc ADR (a)	\$ 364,936
5,700	Abraxis Bioscience, Inc. (a)	232,845
9,100	Alexion Pharmaceuticals, Inc. (a)	421,967
32,100	AMAG Pharmaceuticals, Inc. (a)	1,411,758
54,200	Amgen, Inc. (a)	3,169,616
237,200	Amylin Pharmaceuticals, Inc. (a)(b)	4,264,856
25,700	BioMarin Pharmaceutical, Inc. (a)	499,351
193,300	Celera Corp. (a)	1,300,909
37,900	Celgene Corp. (a)	2,151,962
55,000	Dendreon Corp. (a)	1,523,500
11,000	Facet Biotech Corp. (a)	173,250
37,660	Gilead Sciences, Inc. (a)	1,817,848
65,500	Human Genome Sciences, Inc. (a)	1,733,785
109,200	Incyte Corp. Ltd. (a)	1,166,256
12,900	Momenta Pharmaceuticals, Inc. (a)	188,211
11,200	Nanosphere, Inc. (a)	61,488
15,700	Pharmasset, Inc. (a)	328,130
20,600	Sinovac Biotech Ltd. (a)	123,600
40,990	Vertex Pharmaceuticals, Inc. (a)	1,574,016
		22,508,284
	Health Care Equipment & Supplies 28.8%	
20,500	Alcon, Inc.	3,192,055
27,600	Baxter International, Inc. (c)	1,589,484
62,180	Beckman Coulter, Inc.	4,064,707
40,700	Becton Dickinson & Co.	3,067,559
60,000	CareFusion Corp. (a)	1,545,000
40,900	China Medical Technologies, Inc ADR	534,563
64,500	Cooper Cos., Inc. (The)	2,278,140
118,760	Coviden Plc	6,004,506
26,700	CR Bard, Inc. (c)	2,213,163
76,100	Elekta AB	1,785,262
47,800	Gen-Probe, Inc. (a)	2,052,054
20,500	Henry Schein, Inc. (a)	1,108,025
104,900	Hill-Rom Holdings, Inc.	2,451,513
55,100	Inverness Medical Innovations, Inc. (a)	2,224,387
103,890	Medtronic, Inc.	4,455,842
30,200	ResMed, Inc. (a)	1,544,428
15,800	Sirona Dental Systems, Inc. (a)	508,286
210,700	Smith & Nephew Plc	2,119,631
25,300	Sonova Holding AG	3,131,371
97,000	Stryker Corp.	5,036,240
83,800	Varian Medical Systems, Inc. (a)	4,214,302
64,800 27,900	Zimmer Holdings, Inc. (a) Zoll Medical Corp. (a)	3,649,536 776,736
		59,546,790
	Health Care Providers & Services 17.0%	
160,200	Aetna, Inc.	4,801,194
28,000	AMERIGROUP Corp. (a)	712,600
158,900	AmerisourceBergen Corp.	4,331,614
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19,500	Celesio AG	568,615

18,500	Community Health Systems, Inc. (a)	603,470
28,880	DaVita, Inc. (a)	1,725,869
17,780	Express Scripts, Inc. (a)	1,491,031
24,600	Fresenius Medical Care AG & Co. KGaA	1,246,894
66,010	Medco Health Solutions, Inc. (a)	4,058,295
11,200	Mednax, Inc. (a)	636,832
28,800	Patterson Cos., Inc. (a)	822,528
186,000	UnitedHealth Group, Inc.	6,138,000
88,200	WellPoint, Inc. (a)	5,620,104
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		35,151,339
	Health Care Technology 5.1%	
109,500	Allscripts-Misys Healthcare Solutions, Inc. (a)(b)	1,802,370
37,500	Biogen Idec, Inc. (a)	2,015,250
Shares	Common Stocks	Value
31,800	Health Care Technology (concluded)	¢ 2.405.670
	Cerner Corp. (a)	\$ 2,405,670
39,400 56,800	Genzyme Corp. (a) St. Jude Medical, Inc. (a)	2,137,844
30,000	St. Jude Medical, Ilic. (a)	2,143,064
		10,504,198
		, ,
70.400	Industrial Conglomerates 1.1%	0.007.507
78,400	Koninklijke (Royal) Philips Electronics NV	2,367,537
	Life Sciences Tools & Services 6.7%	
11,600	Gerresheimer AG	379,285
21,700	Life Technologies Corp. (a)	1,078,707
8,300	Mettler-Toledo International, Inc. (a)	809,001
42,900	Millipore Corp. (a)	2,958,813
147,300	PerkinElmer, Inc.	2,966,622
27,400	Tecan Group AG	1,939,236
82,100	Thermo Fisher Scientific, Inc. (a)	3,788,915
		13,920,579
		10,020,070
	Pharmaceuticals 25.6%	
107,340	Abbott Laboratories	5,682,579
17,600	Allergan, Inc.	1,012,000
5,300	BioForm Medical, Inc. (a)	28,938
128,100	Bristol-Myers Squibb Co.	3,120,516
65,000	Cephalon, Inc. (a)	4,149,600
60,100	Eli Lilly & Co.	2,115,520
50,700	Endo Pharmaceuticals Holdings, Inc. (a)	1,019,577
95,470	Johnson & Johnson	6,001,244
15,700	MAP Pharmaceuticals, Inc. (a)	235,657
107,800	Merck & Co., Inc.	4,115,804
84,500	Mylan, Inc. (a)	1,540,435
86,800	Novartis AG	4,645,094
15,190	Novartis AG - ADR	813,121
480,300	Pfizer, Inc.	8,962,398
26,750	Roche Holding AG	4,487,874
24,900	Simcere Pharmaceutical Group - ADR (a)	204,180
63,250	Teva Pharmaceutical Industries Ltd ADR	3,587,540
9,300 18,500	United Therapeutics Corp. (a) Watson Pharmaceuticals, Inc. (a)	554,001 709,845
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		52,985,923
	Total Long-Term Investments	_

Short-Term Securities	
Money Market Fund 3.0%	
BlackRock Liquidity Funds, TempFund, Institutional Class, 0.10%(d)(e)	5,256,054
BlackRock Liquidity Series, LLC, Money Market Series, 0.27% (d)(e)(f)	936,400
Total Short-Term Securities	
(Cost \$6,192,454) 3.0%	6,192,454
Total investments before outstanding options written	
(Cost \$180,633,324*) 98.2%	203,177,104
	Short-Term Securities Money Market Fund 3.0% BlackRock Liquidity Funds, TempFund, Institutional Class, 0.10%(d)(e) BlackRock Liquidity Series, LLC, Money Market Series, 0.27% (d)(e)(f) Total Short-Term Securities (Cost \$6,192,454) 3.0% Total investments before outstanding options written

Contracts	Options Written						
	Exchange-Traded Call Options Written (0.3)%						
100	3SBio, Inc ADR, Strike Price USD 15, Expires 3/22/10	(3,000)					
75	Abbott Laboratories, Strike Price USD 55, Expires 2/22/10	(1,500)					
150	Aetna, Inc., Strike Price USD 32, Expires 2/22/10	(6,750)					
330	Aetna, Inc., Strike Price USD 36, Expires 2/22/10	(2,475)					
25	Alcon, Inc., Strike Price USD 160, Expires 3/22/10	(5,688)					

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Schedule of Investments (continued)

BlackRock Health Sciences Trust (BME) (Percentages shown are based on Net Assets)

25 60		
	Exchange-Traded Call Options Written (continued)	
60	Alcon, Inc., Strike Price USD 165, Expires 2/22/10	\$ (75
	Allergan, Inc., Strike Price USD 65, Expires 4/19/10	(3,45
200	AmerisourceBergen Corp., Strike Price USD 25, Expires 2/22/10	(46,00
50	Amgen, Inc., Strike Price USD 57.50, Expires 4/19/10	(16,37
150	Amgen, Inc., Strike Price USD 60, Expires 3/22/10	(20,85
100	Amylin Pharmaceuticals, Inc., Strike Price USD 17.50, Expires 2/22/10	(10,75
230	Amylin Pharmaceuticals, Inc., Strike Price USD 20, Expires 2/22/10	(4,60
480	Amylin Pharmaceuticals, Inc., Strike Price USD 20, Expires 3/22/10	(48,00
35	Baxter International, Inc., Strike Price USD 60, Expires 2/22/10	(1,22
50	Baxter International, Inc., Strike Price USD 62.50, Expires 3/22/10	(1,50
45	Beckman Coulter, Inc., Strike Price USD 65, Expires 2/22/10	(10,46
100	Beckman Coulter, Inc., Strike Price USD 70, Expires 2/22/10	(4,75
50	Beckman Coulter, Inc., Strike Price USD 70, Expires 3/22/10	(4,25
50	Becton Dickinson & Co., Strike Price USD 80, Expires 2/22/10	(87
430	Bristol-Myers Squibb Co., Strike Price USD 26, Expires 3/22/10	
150		(12,68
	CareFusion Corp., Strike Price USD 27.50, Expires 3/22/10	(30
33	Celgene Corp., Strike Price USD 60, Expires 2/22/10	(1,23
120	Cerner Corp., Strike Price USD 85, Expires 2/22/10	(5,70
24	China Medical Technologies, Inc ADR, Strike Price USD 15, Expires 3/22/10	(1,02
400	CIGNA Corp., Strike Price USD 39, Expires 2/22/10	(4,00
160	Cooper Cos., Inc. (The), Strike Price USD 40, Expires 2/22/10	(4,00
126	Coviden Plc, Strike Price USD 47.50, Expires 2/22/10	(40,95
150	Coviden Plc, Strike Price USD 51, Expires 4/16/10	(24,84
100	CR Bard, Inc., Strike Price USD 90, Expires 4/19/10	(6,50
74	DaVita, Inc., Strike Price USD 65, Expires 4/19/10	(4,99
300	Dendreon Corp., Strike Price USD 30, Expires 2/22/10	(16,05
100	Endo Pharmaceuticals Holdings, Inc., Strike Price USD 22.50, Expires 4/19/10	(4,00
60	Express Scripts, Inc., Strike Price USD 90, Expires 2/22/10	(2,70
150	Gen-Probe, Inc., Strike Price USD 45, Expires 2/22/10	(9,37
150	Genzyme Corp., Strike Price USD 57.50, Expires 3/22/10	(17,25
100	Gilead Sciences, Inc., Strike Price USD 46, Expires 2/22/10	(26,50
150	Gilead Sciences, Inc., Strike Price USD 47, Expires 2/22/10	(28,12
Contracts	Options Written	Value
	<u> </u>	
000	Exchange-Traded Call Options Written (concluded)	Φ (40.04
200	Henry Schein, Inc., Strike Price USD 56.25, Expires 2/26/10	\$ (10,21
330	Hill-Rom Holdings, Inc., Strike Price USD 25, Expires 3/22/10	(20,62
110	Human Genome Sciences, Inc., Strike Price USD 31, Expires 2/22/10	(1,48
50	Human Genome Sciences, Inc., Strike Price USD 34, Expires 2/22/10	(25
360	Incyte Corp. Ltd., Strike Price USD 10, Expires 3/22/10	(44,10
	Inverness Medical Innovations, Inc., Strike Price USD 45, Expires 2/22/10	(1,20
80	Inverness Medical Innovations, Inc., Strike Price USD 45, Expires 3/22/10	(5,25
100		
	Mednax, Inc., Strike Price USD 60, Expires 2/22/10	(2,75
100		
100 50	Mednax, Inc., Strike Price USD 60, Expires 2/22/10	(2,75
100 50 50	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10	(2,75 (2,50
100 50 50 250	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10	(2,75 (2,50 (5,62
100 50 50 250 40	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10	(2,75 (2,50 (5,62 (1,40
100 50 50 250 40 20	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10	(2,75 (2,50 (5,62 (1,40 (1,10
100 50 50 250 40 20 250	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10 Mylan, Inc., Strike Price USD 18, Expires 2/22/10 Novartis AG - ADR, Strike Price USD 55, Expires 2/22/10	(2,75 (2,50 (5,62 (1,40 (1,10 (18,75 (5,66
100 50 50 250 40 20 250 151 200	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10 Mylan, Inc., Strike Price USD 18, Expires 2/22/10 Novartis AG - ADR, Strike Price USD 55, Expires 2/22/10 PerkinElmer, Inc., Strike Price USD 22.50, Expires 3/22/10	(2,75 (2,50 (5,62 (1,40 (1,10 (18,75 (5,66 (5,00
100 50 50 250 40 20 250 151 200 530	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10 Mylan, Inc., Strike Price USD 18, Expires 2/22/10 Novartis AG - ADR, Strike Price USD 55, Expires 2/22/10 PerkinElmer, Inc., Strike Price USD 22.50, Expires 3/22/10 Pfizer, Inc., Strike Price USD 19, Expires 3/22/10	(2,75 (2,50 (5,62 (1,40 (1,10 (18,75 (5,66 (5,00 (28,35
100 50 50 250 40 20 250 151 200 530	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10 Mylan, Inc., Strike Price USD 18, Expires 2/22/10 Novartis AG - ADR, Strike Price USD 55, Expires 2/22/10 PerkinElmer, Inc., Strike Price USD 22.50, Expires 3/22/10 Pfizer, Inc., Strike Price USD 19, Expires 3/22/10 Pfizer, Inc., Strike Price USD 20, Expires 3/22/10	(2,75) (2,50) (5,62) (1,40) (1,10) (18,75) (5,66) (5,00) (28,35) (12,92)
100 50 50 250 40 20 250 151 200 530	Mednax, Inc., Strike Price USD 60, Expires 2/22/10 Medtronic, Inc., Strike Price USD 45, Expires 2/22/10 Merck & Co., Inc., Strike Price USD 41, Expires 2/22/10 Mettler-Toledo International, Inc., Strike Price USD 110, Expires 2/22/10 Millipore Corp., Strike Price USD 75, Expires 3/22/10 Mylan, Inc., Strike Price USD 18, Expires 2/22/10 Novartis AG - ADR, Strike Price USD 55, Expires 2/22/10 PerkinElmer, Inc., Strike Price USD 22.50, Expires 3/22/10 Pfizer, Inc., Strike Price USD 19, Expires 3/22/10	(2,75 (2,50 (5,62 (1,40 (1,10 (18,75 (5,66 (5,00 (28,35

100	Teva Pharmaceutical Industries Ltd ADR, Strike Price USD 52.50, Expires 3/22/10	(48,000)
270	Thermo Fisher Scientific, Inc., Strike Price USD 50, Expires 2/22/10	(4,050)
250	UnitedHealth Group, Inc., Strike Price USD 36, Expires 2/22/10	(3,375)
25	UnitedHealth Group, Inc., Strike Price USD 36, Expires 3/22/10	(1,487)
300	Varian Medical Systems, Inc., Strike Price USD 50, Expires 2/22/10	(40,500)
150	Vertex Pharmaceuticals, Inc., Strike Price USD 45, Expires 2/22/10	(2,250)
100	Watson Pharmaceuticals, Inc., Strike Price USD 45, Expires 5/24/10	(4,000)
150	WellPoint, Inc., Strike Price USD 65, Expires 2/22/10	(18,375)
120	WellPoint, Inc., Strike Price USD 75, Expires 3/22/10	(2,400)
220	Zimmer Holdings, Inc., Strike Price USD 60, Expires 2/22/10	(5,500)
60	Zimmer Holdings, Inc., Strike Price USD 65, Expires 2/22/10	(300)
80	Zoll Medical Corp., Strike Price USD 30, Expires 3/22/10	(5,600)
	Total Exchange-Traded Call Options Written	(722,978)

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Schedule of Investments (continued)

BlackRock Health Sciences Trust (BME) (Percentages shown are based on Net Assets)

Contracts	Options Written	Value	
	Exchange-Traded Put Options Written (0.1)%		
245	Aetna, Inc., Strike Price USD 29, Expires 2/22/10	\$ (18,375)	
180	Celgene Corp., Strike Price USD 55, Expires 2/22/10	(14,400)	
200	Genzyme Corp., Strike Price USD 52.50, Expires 2/22/10	 (17,500)	
	Total Exchange-Traded Put Options Written	(73,775)	
	Over-the-Counter Put Options Written	(22.522)	
100	Vertex Pharmaceuticals, Inc., Strike Price USD 40, Expires 2/22/10	(23,500)	
	Over-the-Counter Call Options Written (0.2)%		
40,000	Abbott Laboratories, Strike Price USD 55.25, Expires 2/18/10, Broker UBS Securities LLC	(4,129)	
10,000	AmerisourceBergen Corp., Strike Price USD 26.78, Expires 3/04/10, Broker Morgan Stanley & Co., Inc.	(9,962)	
22,000	AmerisourceBergen Corp., Strike Price USD 26.89, Expires 3/12/10, Broker Credit Suisse First Boston	(22,220)	
20,000	Amylin Pharmaceuticals, Inc., Strike Price USD 15.70, Expires 2/04/10, Broker Morgan Stanley &	(22,220)	
,,,,,	Co., Inc.	(45,609)	
8,000	Becton Dickinson & Co., Strike Price USD 78.51, Expires 2/26/10, Broker UBS Securities LLC	(2,783)	
34,500	Bristol-Myers Squibb Co., Strike Price USD 26.01, Expires 2/25/10, Broker Morgan Stanley & Co.,	,	
	Inc.	(2,300)	
19,500	Cephalon, Inc., Strike Price USD 66.03, Expires 3/01/10, Broker Morgan Stanley & Co., Inc.	(29,217)	
6,000	Coviden Plc, Strike Price USD 51.80, Expires 3/30/10, Broker Citigroup Global Markets	(6,407)	
26,600	Elekta AB, Strike Price SEK 185.64, Expires 2/24/10, Broker Citigroup Global Markets	(6,899)	
20,000	Eli Lilly & Co., Strike Price USD 37.97, Expires 3/05/10, Broker UBS Securities LLC	(3,033)	
62	Fresenius Medical Care AG & Co. KGgA, Strike Price EUR 39, Expires 2/19/10, Broker Citigroup Global Markets	(1,048)	
17,000	Johnson & Johnson, Strike Price USD 65, Expires 2/16/10, Broker Deutsche Bank Securities	(3,034)	
19,000	Johnson & Johnson, Strike Price USD 65.25, Expires 3/03/10, Broker Deutsche Bank Securities	(5,523)	
100	Koninklijke (Royal) Philips Electronics NV, Strike Price EUR 21.50, Expires 2/19/10, Broker Citigroup Global Markets	(12,238)	
18,000	Koninklijke (Royal) Philips Electronics NV, Strike Price EUR 21.50, Expires 3/24/10, Broker Goldman Sachs & Co.	(25,671)	
75	Koninklijke (Royal) Philips Electronics NV, Strike Price EUR 24, Expires 2/19/10, Broker Citigroup	(23,071)	
	Global Markets	(6,736)	
25,000	Medco Health Solutions, Inc., Strike Price USD 66.52, Expires 2/26/10, Broker UBS Securities LLC	(6,157)	
Contracts	Options Written	Value	
	Over-the-Counter Call Options Written (concluded)		
30,000	Medtronic, Inc., Strike Price USD 46, Expires 3/08/10, Broker Goldman Sachs & Co.	\$ (14,587)	
9,000	Merck & Co., Inc., Strike Price USD 38, Expires 2/10/10, Broker Credit Suisse First Boston	(7,667)	
10,000	Millipore Corp., Strike Price USD 72.63, Expires 2/08/10, Broker Morgan Stanley & Co., Inc.	(1,737)	
15,000	Novartis AG, Registered Shares, Strike Price CHF 55.39, Expires 2/09/10, Broker UBS Securities LLC	(22,032)	
12,000	Novartis AG, Registered Shares, Strike Price CHF 56.85, Expires 3/05/10, Broker Citigroup Global		
45,000	Markets PerkinElmer, Inc., Strike Price USD 20.50, Expires 2/19/10, Broker Morgan Stanley & Co., Inc.	(4,740)	
•	Pfizer, Inc., Strike Price USD 18.50, Expires 2/19/10, Broker Morgan Stanley & Co., Inc.	(16,455) (28,793)	
53,000 80	Roche Holding AG, Strike Price CHF 180, Expires 3/19/10, Broker Morgan Stanley & Co., Inc.	(28,793)	
65,000	Smith & Nephew Plc, Strike Price GBP 6.48, Expires 2/24/10, Broker UBS Securities LLC	(27,662)	
8,400	Sonova Holding AG, Strike Price GBF 0.46, Expires 2/09/10, Broker Credit Suisse First Boston	(45,098)	
10,000	St. Jude Medical, Inc., Strike Price USD 40.98, Expires 2/25/10, Broker Morgan Stanley & Co., Inc.	(43,098)	
9,300	Tecan Group AG, Registered Shares, Strike Price CHF 80.52, Expires 3/10/10, Broker UBS	(331)	
3,000	Securities LLC	(7,070)	
12,500		(8,367)	
12,000		(0,007)	

Teva Pharmaceutical Industries Ltd. - ADR, Strike Price USD 58.64, Expires 3/05/10, Broker UBS Securities LLC.

34,000	UnitedHealth Group, Inc., Strike Price USD 33.27, Expires 2/08/10, Broker Citigroup Global Markets	(19,101)
	Total Over-the-Counter Call Options Written	(404,874)
	Total Options Written (Premiums Received \$1,944,830) (0.6)%	(1,201,627)
	Total investments net of outstanding options written 97.6% Other Assets Less Liabilities 2.4%	201,975,477 4,879,204
	Net Assets 100.0%	\$ 206,854,681

The cost and unrealized appreciation (depreciation) of investments as of January 31, 2010, as computed for federal income tax purposes, were as follows:

Aggregate cost	\$	180,631,153
	_	
Gross unrealized appreciation	\$	24,534,347
Gross unrealized depreciation		(1,988,396)
	_	
Net unrealized appreciation	\$	22,545,951

- (a) Non-income producing security.
- (b) Security, or a portion of security, is on loan.
- (c) Security, or a portion thereof, pledged as collateral for outstanding options written.
- (d) Investments in companies considered to be an affiliate of the Trust, for purposes of Section 2(a)(3) of the Investment Company Act of 1940 were as follows:

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Schedule of Investments (concluded)

BlackRock Health Sciences Trust (BME) (Percentages shown are based on Net Assets)

Affiliate	N	Net Activity		
BlackRock Liquidity Funds, TempFund, Institutional Class BlackRock Liquidity Series, LLC Money Market Series	\$	(4,476,284)	\$ 560	
	\$	(1,215,600)	\$ 66	

- (e) Represents current yield as of report date.
- (f) Security purchased with the cash collateral from securities loans.

Foreign currency exchange contracts as of January 31, 2010 were as follows:

Currency Currency Purchased Sold		-		Counterparty	Settlement Date	Unrealized Appreciation (Depreciation)
CHF	485,000	USD	461,869	Citigroup Global Markets	2/01/10	\$ (4,623)
JSD	4,189	EUR	3,000	Citigroup Global Markets	2/02/10	30
JSD	38,833	EUR	28,000	Citigroup Global Markets	2/03/10	11
JSD	18,073	CHF	19,000	Deutsche Bank Securities	2/02/10	160
						\$

For Trust compliance purposes, the Trust s industry classifications refer to any one or more of the industry sub-classifications used by one or more widely recognized market indexes or ratings group indexes, and/or defined by Trust management. This definition may not apply for purposes of this report, which may combine industry sub-classifications for reporting ease.

Fair Value Measurements Various inputs are used in determining the fair value of investments, which are as follows:

Level 1 price quotations in active markets/exchanges for identical assets and liabilities

Level 2 other observable inputs (including, but not limited to: quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market-corroborated inputs)

Level 3 unobservable inputs based on the best information available In the circumstances, to the extent observable inputs are not available (including the Trusts' s own assumptions used in determining the fair value of investments)

The inputs or methodologies used for valuing securities are not necessarily an indication of the risk associated with investing in those securities. For information about the Trust s policy regarding valuation of investments and other significant accounting policies, please refer to the Trust s most recent financial statements as contained in its annual report.

The following table summarizes the inputs used as of January 31, 2010 in determining the fair valuation of the Trust s investments:

Investments in Securities

	Level 1		Level 2	Level 3		Total
\$	22,508,284				\$	22,508,284
·	52,510,526	\$	7,036,264			59,546,790
	33,335,830		1,815,509			35,151,339
	10,504,198					10,504,198
			2,367,537			2,367,537
	11,602,058		2,318,521			13,920,579
	43,852,955		9,132,968			52,985,923
	5,256,054		936,400			6,192,454
\$	179,569,905	\$	23,607,199		\$	203,177,104
		\$ 22,508,284 52,510,526 33,335,830 10,504,198 11,602,058 43,852,955 5,256,054	\$ 22,508,284 52,510,526 \$ 33,335,830 10,504,198 11,602,058 43,852,955 5,256,054	\$ 22,508,284 52,510,526 \$ 7,036,264 33,335,830 1,815,509 10,504,198 2,367,537 11,602,058 2,318,521 43,852,955 9,132,968 5,256,054 936,400	\$ 22,508,284 52,510,526 \$ 7,036,264 33,335,830 1,815,509 10,504,198 2,367,537 11,602,058 2,318,521 43,852,955 9,132,968 5,256,054 936,400	\$ 22,508,284 \$ 52,510,526 \$ 7,036,264 \$ 33,335,830 1,815,509 \$ 10,504,198 \$ 2,367,537 \$ 11,602,058 2,318,521 \$ 43,852,955 9,132,968 \$ 5,256,054 936,400

Other Financial Instruments¹

Valuation Inputs	ation Inputs Level 1		Level 2		Level 3	Total	
Assets: Liabilities:	\$	(754,027)	\$	201 (452,223)		\$	201 (1,206,250)
Total	\$	(754,027)	\$	(452,022)		\$	(1,206,049)

Other financial instruments are foreign currency exchange contracts and options. Foreign currency exchange contracts are valued at the unrealized appreciation/depreciation on the instrument and options are shown at market value.

KEY TO ABBREVIATIONS

ADR American Depositary Receipt

CHF Swiss Franc

EUR Euro

GBP British Pound

SEK Swedish Krona

USD U.S. Dollar

JANUARY 31, 2010

Item 2 Controls and Procedures

- 2(a) The registrant's principal executive and principal financial officers or persons performing similar functions have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the 1940 Act)) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13(a)-15(b) under the Securities Exchange Act of 1934, as amended.
- 2(b) There were no changes in the registrant s internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the registrant s last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant s internal control over financial reporting.
- Item 3 Exhibits

Certifications Attached hereto

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BlackRock Health Sciences Trust

By: /s/ Anne F. Ackerley

Anne F. Ackerley Chief Executive Officer of BlackRock Health Sciences Trust

Date: March 19, 2010

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By: /s/ Anne F. Ackerley

Anne F. Ackerley Chief Executive Officer (principal executive officer) of BlackRock Health Sciences Trust

Date: March 19, 2010

By: /s/ Neal J. Andrews

Neal J. Andrews Chief Financial Officer (principal financial officer) of BlackRock Health Sciences Trust

Date: March 19, 2010